

MAMMALS OF THE MUNJA-WALCOTT INLET AREA WEST KIMBERLEY, WESTERN AUSTRALIA

By ANDREW CHAPMAN Department of Conservation and Land
Management, PO Box 366, KALGOORLIE 6430

INTRODUCTION

Between 1-27 May 1983 I recorded data on species of mammals present, their abundance and habitats occupied in the Munja-Walcott Inlet area, while participating in the 1983 Australian and New Zealand Scientific Exploration Society (ANZSES) Kimberley Expedition. Data were recorded from sites chosen to represent the main geological/vegetation/landform types of this area. Mammals were observed with head torches and a 12 volt 100 watt portable spotlight. Trapping was restricted by the necessity to back pack all equipment, however traplines of 10 of each of 'Shermann' box traps and 'Fourways' breakback, traps were run for 4-5 days periods in most habitats. Cage traps were also set at these sites.

Trapping sites and effort are described below. A mixture of peanut paste and rolled oats were used for bait. K.F. Kenneally collected bats at the base campsite and some mist-netting was undertaken elsewhere. A small collection of mammal specimens, M17490-99, has been lodged with the Western Australian Museum.

Prior to this expedition there had been no investigation of the mammal fauna of this area nor could I locate any published observations. However since this expedition two sites near the mouth of the Isdell River have been surveyed as part of the Kimberley component of the National Rainforest Programme. At a site numbered 19/2 located at 124° 50' 35"E, 16° 27' 35"S 13 mammal species were recorded (Friend *et al.* 1991). These sites as well as those along the Charnley River reported here are included in the proposed Walcott Inlet National park, (see Burbidge *et al.* 1991).

Vegetation at trapping sites was described following Muir (1977) except for vine thicket descriptions which follow Beard (1976).

- Site 1 Located at 124° 59'E, 16° 19' S near base camp in Open Low Woodland A over Dense Tall Grass on riverine flood plain. 100 trap nights.
- Site 2a Located at 124° 59'E, 16° 23' S on the Charnley River in vine thicket and monsoon forest. 80 trap nights.
- Site 2b Located near 124° 59'E, 16° 23' S on the Charnley River in tumbled King Leopold Sandstone with *Triodia* spp. Open Low Woodland A over Low Scrub A over Mid Dense Hummock Grass. 80 Trap nights.
- Site 3a Located at 124° 58'E, 16° 15' S in a ravine in the Harding Range, a vine thicket and monsoon forest. 20 trap nights.
- Site 3b Located near 124° 58'E, 16° 15' S in a ravine in the Harding Range, a savannah woodland on valley slopes. Low Woodland A over Mid Dense Hummock grass, 20 trap nights.

These sites are indicated in Map 1 in Kenneally and Edinger (this publication).

ANNOTATED LIST

The nomenclature used follows Strahan (1983).

TACHYGLOSSIDAE

Tachyglossus aculeatus - Short-beaked Echidna.

Echidna scats were seen on only one occasion, on Warton Sandstone in the Harding Range. Apparently uncommon.

DASYURIDAE

Dasyurus hallucatus - Northern Quoll

Northern Quoll were caged-trapped repeatedly in vine thicket and King Leopold Sandstone near Charnley Gorge at 16° 24'00"S, 124° 59' 30" E and observed in riverine woodland on basalt in Neville Creek near site 3a. I received several reports of 'spotted, foxy-faced miscreants' raiding food supplies from expedition members. Here, as elsewhere in the Kimberley, this species is relatively abundant and occupies a wide variety of habitats.

PERAMELIDAE

Isoodon auratus - Golden Bandicoot.

A bandicoot observed in a vine thicket adjacent to King Leopold Sandstone near site 2a, was probably this species, although *Isoodon macrourus* cannot be ruled out. Habitat considerations from elsewhere in the Kimberley, eg McKenzie *et al.* (1975) for the Prince Regent Reserve, suggest *I. auratus* the more likely. Both species are present nearby at Wotjulum (16° 11'S, 123° 37'E), (Kitchener & Vicker 1981). *Isoodon macrourus* was recorded at Isdell River (Friend *et al.* 1991).

PHALANGERIDAE

Wyulda squamicaudata - Scaly-tailed Possum.

A sub-adult female was observed from 2-3 m in a tree in King Leopold Sandstone near Charnley Gorge at 124° 59'E, 16° 24'S The possum apparently disturbed by the spotlight moved to the top of the tree, then launched itself into mid air, landing in a pile of sandstone where it disappeared. This is a rare and little known species and one of the few mammal species endemic in the Kimberley; most Kimberley mammals also occur in Arnhemland or elsewhere in the tropics. Sighting this animal on a hot night, at 2.00 am and showing it to two fellow participants was a highlight of the expedition.

MACROPODIDAE

Petrogale ? brachyotis - Short-eared Rock-wallaby.

Rock wallabies with a dark neck-axillary stripe were frequently seen in King Leopold Sandstone around Charnley Gorge at 124° 59' 30"E, 16° 24' 00"S Also present at site 2b. They were quite abundant at these sites and could readily be seen by day. They occur alongside ? *Peradorcas concinna* (see

below). *Petrogale ? brachyotis* were also present, presumably as an isolated colony, on Warton Sandstone on Mt Daghish. Characteristic scats were recorded on basaltic rocks in the gorge of Neville Creek near 124° 58'E, 16° 15' S.

Peradorcas concinna - Nabarlek

Smaller rock-wallabies were present around Charnley Gorge with *Petrogale ? brachyotis* but not observed during the day. The possibility of these small rock wallabies being *Petrogale burbidgei* can not be overlooked as the habitat here is similar to that where *P. burbidgei* has been recorded further north in the Kimberley. However, *Peradorcas* occurs relatively close (ca 150 km) to Charnley Gorge on Long Island in the Buccaneer Archipelago (Mckenzie et al. 1978)

Macropus robustus - Common Wallaroo

Wallaroos were presumed to be the large kangaroo reported occasionally to me by members of the expedition. Apparently very scarce, only seen in sandstone country. Sometimes present on Munja Plain according to Wattie Ngerdu. Possibly confused with *Macropus antilopinus*.

PTEROPODIDAE

Macroglossus minimus - Northern Blossom Bat.

One adult female was mist-netted at the same time and place as *Macroderma gigas* (below).

Pteropus alecto - Black Flying-fix.

One female was shot flying over the Calder River near the base camp, savannah woodland was adjacent. A camp of 'some thousands' of flying-foxes was reported to me by expedition participants on the Isdell River at Grid reference 115.574 on the Matthew 1:100,000 sheet. they were in 'riverside trees and pandanus'.

MEGADERMATIDAE

Macroderma gigas - Ghost Bat.

One adult female mist-netted in riverine woodland of *Eucalyptus camaldulensis* and *Erythrophleum* sp. near Charnley Gorge, at 16° 23'S, 124° 58'E.

EMBALLONURIDAE

Taphozous flaviventris - Yellow-bellied Sheathtail Bat.

One of these distinctive bats was observed along the Calder River near base camp, at 16° 19' S 124° 58'E,.

MOLOSSIDAE

Chaerophon jobensis - Northern Mastiff-Bat.

Three were shot on the Calder River near 124° 58'E, 16° 19'S with savannah woodland adjacent.

MURIDAE

Hydromys chrysogaster - Water Rat.

One sub-adult was seen swimming in a pond in Neville Creek near site 3a. This site is well upstream; there were no fish or crustaceans sighted. Frogs and insects were the only readily visible aquatic food source. When disturbed the animal remained submerged under rocks for some 10 minutes.

? *Mesembriomys macrurus* - Golden-backed Tree Rat.

A large tree-rat, body length ca 25 cm, was observed and heard gnawing vines, in a vine thicket near Charnley Gorge at 16° 24' 00"S, 124° 59' 30"E. The only noticeable characteristic was that when viewed from underneath the entire tail was white. Golden-backed Tree Rat was recorded at site 19/2 near the mouth of the Isdell River in the Rainforest Survey (Friend *et al.* 1991).

Zyzomys argurus - Common Rock Rat.

Trapped in King Leopold Sandstone near Charnley Gorge (site 2b), in vine thicket on basalt in Neville Creed (site 3a) and in savannah woodland with Warton Sandstone in Harding Range (site 3b). Three specimens were lodged in the WA Museum, five others were released. This rodent is widespread and common in northern Australia wherever suitable rocky habitat prevails.

Leggadina forresti - Forrest's Mouse.

One was trapped in tall dense grassland on riverine plain (site 1).

CANIDAE

Canis familiaris dingo - Dingo.

Pairs and single animals were seen on several occasions on Munja Plain, along Calder and Isdell Rivers and in Warton Sandstones. Often heard calling at night from vicinity of Mt Daglish.

FELIDAE

Felis catus - Cat.

One, a tabby, was seen in grassland on Munja Plain.

EQUIDAE

Equus caballus - Horse.

Small groups of 2-3 horses were seen on Munja Plain on several occasions. These are stock horses which are used for annual mustering by the Mowanjum Community.

CAMELIDAE

Camelus dromedarius - One-humped Camel.

Several camel skulls around the site of the former Munja settlement are those of camels which were used to pack equipment from Pantijan to Munja. Live animals were not present.

BOVIDAE

Bos taurus - Cow.

Cattle are now permanent and significant elements of the fauna of Munja Plain. They are subject to an annual dry season muster by the Mowanjum Community Inc. Most cattle were on the rivers and swamps of the plain, however tracks and scats indicate that they do follow creeks up into the Harding Range. At the time of our visit there were probably some 200-300 cattle on Munja Plain.

DISCUSSION

The seventeen native mammal species detected by this expedition certainly do not indicate the probable mammal species-richness of this area. Conversations with Wattie Ngerdu indicate the following readily recognisable species also occur on Munja Plain: *Onchogalea unguifera*, Northern Nailtail Wallaby, *Petaurus breviceps*, Sugar Glider and *Phascogale tapoatafa*, Brush-tailed Phascogale. A greater trapping effort would add several species of small dasyurids and rodents and greater effort in bat collecting would make these results more comparable to those of other Kimberley fauna surveys. For mammal survey work, large numbers of people in the field are no substitute for specialised and intensive collecting techniques, because of the cryptic nature of the Australian mammal fauna. However in spite of this constraint this expedition did have the opportunity to examine the mammal fauna of King Leopold sandstones and contributes to the knowledge of the fauna of the proposed National Park.

Investigation of the King Leopold Sandstones and monsoon forest around Chamley Gorge indicate that this area in particular has an interesting and diverse mammal fauna worthy of further examination. In particular precise identification of Rock Wallabies, *Petrogale/Peradorcas*, Bandicoots, *Isodon* spp, Tree Rats, *Mesembriomys/Conilurus* is required. Additionally the existence of two types of rock wallabies together in the same habitat is unusual and would be worth further study.

In spite of the superficial nature of this survey our results do allow some comment on the assemblage of mammals at Walcott Inlet and Munja. The general conclusion is, as it was for the birds, that the fauna is more typical of more humid, wetter areas further north.

The average annual rainfall at Munja is probably ca 900 mm (extrapolation from data in Rainfall Map - Western Australia Yearbook 1975). Other areas where fauna surveys have been done, in north west and central Kimberley, are all wetter. For example, the Drysdale River National park straddles the 1000 mm isohyet, Kabay *et al.* (1977); three quarters of the Prince Regent Reserve lies within the 1200-1400 mm isohyet, (Ibid) and the Mitchell Plateau, one of the wettest areas in WA has an annual average of 1583 mm (Wilson 1981). In spite of its relative aridity, the Munja area has a mammal fauna superficially more similar to the Prince Regent River Reserve than the Drysdale River National Park, see McKenzie *et al.* (1975, 1977). Additionally, discounting the record from Broome (see Burbidge, 1983)

Wyulda squamicaudata at Charnley Gorge is the most southerly record at present.

One aspect of the fauna of Munja Plain which is unexplained, is the scarcity of macropods. It is unlikely to be due to competitive grazing by cattle as five species of large macropod persist in the Phanerozoic South-west Kimberley in spite of grazing competition, (McKenzie 1981). Also Gooding & Harrison (1952) report a proliferation of *Macropus agilis* on the Ord River after grazing. As far as the persistence of other species on Munja Plain and surrounds is concerned, McKenzie (1981), has briefly reviewed the Kimberley situation. The general conclusion is that although many species have declined with grazing and burning practices associated with the pastoral industry in more arid parts of Australia, in humid and tropical areas most native mammal species have survived in spite of grazing. This conclusion is borne out by the observations of Wattie Ngerdu, who recalls no major change to the mammal fauna of the area since the advent of the pastoral industry here in 1944. Additionally in the Walcott Inlet area most mammals are found in sandstones and vine thickets which although visited by cattle are not extensively grazed.

ACKNOWLEDGEMENTS

The Australian and New Zealand Scientific Exploration Society provided my air-fare to the Kimberley. Ian Maley organised and led the expedition. Members of the expedition kindly carried traps, spotlights, etc and provided details of their observations. Dave Fell and Warren Lloyd managed a trapline. Wattie Ngerdu with patience and good humour, imparted his knowledge of animals in the area. Department of Conservation and Land Management (formerly Fisheries and Wildlife) loaned traps and a spotlight and the WA Museum provided collecting equipment and confirmed identifications. N.L. McKenzie and D.J. Kitchener commented on an early draft. June Anderson typed the manuscript.

REFERENCES

- BEARD, J.S. 1977. The Monsoon forests of Admiralty Gulf, Western Australia. *Vegetatio* 31:177-192.
- BURBIDGE, A.A., MCKENZIE, N.L. & KENNEALLY, K.F. 1991. Nature Conservation Reserves in the Kimberley. Department of Conservation and Land Management, Perth.
- BURBIDGE, A.A. 1983. *Wyulda squamicaudata*. In: The Australian museum complete Book of Australian Mammals. (Ed.) R. Strahan. Angus & Robertson.
- FRIEND, G.R., MORRIS, K.D. & MCKENZIE N.L. 1991. The mammal fauna of Kimberley rainforests. pp 393-412 In Kimberley Rainforests (Eds) N.L. McKenzie, R.B. Johnston, and P.G. Kendrick. Surrey Beatty and Sons. Chipping Norton.

GOODING, C.D. & HARRISON, L.A. 1952. The Wallaby menace in the Kimberley. *Western Australian Journal of Agriculture*. 2: 333-340.

KABAY, E.D., GEORGE, A.S. & KENNEALLY, K.F. 1977. The Drysdale River National Park Environment. In: A biological survey of the Drysdale River National Park. (Eds.) E.D. Kabay & A.A. Burbidge. *Wildl. Res. Bull. West. Aust.* No. 6:13-30.

KITCHENER, D.J. & VICKER, E. 1981. Catalogue of Modern Mammals in the Western Australian Museum 1895-1981. WA Museum, Perth.

McKENZIE, N.L., CHAPMAN, A. & YOUNGSON, W.K. 1975. Mammals of the Prince Regent River Reserve. In: A Biological Survey of the Prince Regent River Reserve. (Ed. Jenefer M. Miles & Andrew A. Burbidge) *Wildl. Res. Bull. West. Aust.* No. 3:69-74.

McKENZIE, N.L., CHAPMAN, A., YOUNGSON, W.K. & BURBIDGE A.A. 1977. Mammals In: A biological survey of the Drysdale River National park (Eds. E.D. Kabay, A.A. Burbidge) *Wildl. Res. Bull. West. Aust.* No. 6:79-85.

McKENZIE, N.L., BURBIDGE A.A., CHAPMAN, A., YOUNGSON, W.K. 1978. Mammals In: The islands of the north-west Kimberley, Western Australia. (Eds. A.A. Burbidge and N.L. McKenzie.) *Wildl. Res. Bull. West. Aust.* No. 7:22-28.

McKENZIE, N.L. 1981. Mammals of the Phanerozoic South-west Kimberley, Western Australia: Biogeography and recent changes. *Journ. Biogeog.* 8:263-280.

MUIR, B.G. 1977. Biological Survey of the Western Australian wheatbelt. part 2. Vegetation and Habitat of Bendering Reserve. *Rec. West. Aust. Mus. Suppl.* No. 3.

STRAHAN, R. 1983. *The Australian Museum Complete Book of Australian Mammals*. Angus & Robertson, Sydney.

WILSON B.R. 1981. Biological Survey of Admiralty Gulf, Kimberley, Western Australia: 1-11. General Introduction. Western Australian Museum, Perth.